

### **REMARKS**

In the July 11, 2008 Office Action, all of the claims stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

#### ***Status of Claims and Amendments***

In response to the July 11, 2008 Office Action, Applicants have amended claims 1, 7, 8, 19 and 20 as indicated above. Also, claims 2-6, 15-18 and 21 have been cancelled and new claims 22-24 have been added as indicated above. Thus, claims 1, 7-14, 19, 20 and 22-24 are now pending, with claims 1 and 8 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

#### ***Rejections - 35 U.S.C. § 103***

In paragraphs 2-11 of the Office Action, claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,218,753 (Asano et al.) in view of U.S. Patent No. 5,260,620 (Morrill). In response, Applicants have amended claims 1 and 8 to more clearly distinguish the prior art of record. Independent claim 1 generally corresponds to previously presented claim 6, but also includes limitations from previously presented claim 5 and other clarifying amendments. Similarly, independent claim 8 generally corresponds to previously presented claim 8, but also includes limitations from previously presented claim 5 and other clarifying amendments. Thus, independent claims 1 and 8 include new combinations of limitations as compared to the previously presented claims.

Specifically, independent claim 1 requires, *inter alia*, the first non-magnetic layers and the second non-magnetic layers being positioned to cancel 5-th order harmonics or 7-th order harmonics of an induction voltage, and the first non-magnetic layers and the second non-magnetic layers being independent from one another, and the rotor core being interposed between them, wherein an angle  $\theta 1$  being measured between a pole center side edge section, in the vicinity of the rotor surface, of the first non-magnetic layer and a position between the poles, and an angle  $\theta 2$  being measured between a pole center side edge section, in the vicinity of the rotor surface, of the second non-magnetic layer and the position, wherein  $0 <$

$\theta 1 < 180/(5 \cdot P_n)$  and  $180/(5 \cdot P_n) \leq \theta 2 \leq 180 \times 2/(5 \cdot P_n)$  or  $0 < \theta 1 < 180/(7 \cdot P_n)$  and  $180/(7 \cdot P_n) \leq \theta 2 \leq 180 \times 2/(7 \cdot P_n)$ , where a pole pair number is  $P_n$ .

Similarly, independent claim 8 requires, *inter alia*, the first non-magnetic layers and the second non-magnetic layers being positioned to cancel 5-th order harmonics or 7-th order harmonics of an induction voltage, the first non-magnetic layers and the second non-magnetic layers being independent from one another, and the rotor core being interposed between them, an angle  $\theta 5$  being measured between a pole center side edge section, in the vicinity of the rotor surface, of the first non-magnetic layer and a position between the poles, an angle  $\theta 6$  being measured between a pole center side edge section, in the vicinity of the rotor surface, of the second non-magnetic layer and the position between the poles, wherein  $0 < \theta 5 < 180/(5 \cdot P_n)$  and  $180/(5 \cdot P_n) \leq \theta 6 \leq 180 \times 2/(5 \cdot P_n)$  where a pole pair number is  $P_n$ , a rotor core section width has points of inflection, the rotor core section width being sandwiched by the first non-magnetic layers and the second non-magnetic layers and the rotor surface, and angles  $\theta 7$  and  $\theta 8$  being measured between respective points of inflection and the position between the poles, wherein  $0 < \theta 7 < 180/(7 \cdot P_n)$  and  $180/(7 \cdot P_n) \leq \theta 8 \leq 180 \times 2/(7 \cdot P_n)$  where a pole pair number is  $P_n$ , and a relationship of the angles  $\theta 5$ ,  $\theta 6$ ,  $\theta 7$  and  $\theta 8$  is  $\theta 7 < \theta 5 < \theta 8 < \theta 6$ .

Clearly these unique arrangements of independent claims 1 and 8 are *not* disclosed or suggested by the Asano et al. patent and/or the Morrill patent, whether taken singularly or in combination.

The Office Action relies on column 1, lines 35-38 of the Morrill patent to allegedly teach cancellation of 5<sup>th</sup> harmonics. However, column 1, lines 35-38, is background information in the Morrill patent, and the Morrill patent is actually directed to ***a technique to cancel higher harmonics by devising teeth of stator***, and it is a different technique from the structure set forth in independent claim 1. Moreover, contrary to the assertion in the Office Action, column 1, lines 35-38 of the Morrill patent merely states that “the fifth harmonics are reduced and the seventh and ninth harmonics do not appear to or do not couple the rotor” in this Background section. Therefore, column 1, lines 35-38 of the Morrill patent does not teach cancelling 5<sup>th</sup> or 7<sup>th</sup> harmonics as now set forth in independent claims 1 and 8. Furthermore, because the Morrill patent is actually directed to a technique to cancel higher

harmonics by devising teeth of stator, one of ordinary skill in the art would not even attempt to modify the rotors of Figures 1 and 3 of the Asano et al. patent using the Morrill patent's technique of devising stator teeth. In other words, such devisal of stator teeth cannot be applied to first and second non-magnetic layers of a rotor. Therefore, even if combination of the Morrill patent and the Asano et al. patent is attempted, one of ordinary skill in the art cannot arrive at the characteristic structure of independent claims 1 and 8 of the present invention because there is no reason to modify the rotor of the Asana et al' patent based on the teachings regarding stator teeth of the Morrill patent to result in a *rotor having first and second first and second non-magnetic layers that cancel 5<sup>th</sup> or 7<sup>th</sup> harmonics*, as now claimed.

Additionally, contrary to the assertions of the Office Action, the Asano et al. patent *does not* disclose non-magnetic layers corresponding to the second non-magnetic layers of amended independent claims 1 and 8 of the present application. That is, the Asano et al. patent *does not* disclose "second non-magnetic layers" which satisfies "being located...at pole center side positions with respect to the first non-magnetic layers" and "the rotor core is interposed between them", as set forth in independent claims 1 and 8.

Finally, with respect to the angular limitations now set forth in independent claims 1 and 8, the Office Action appears to acknowledge that the angular limitations of previously presented claims 6-9 are not disclosed in the prior art at in paragraph 6 of the Office Action, but asserts that these angles are obvious based on the Morrill patent. This position of the Office Action is untenable. As explained above, the Morrill patent is directed to a technique to cancel higher harmonics by *devising teeth of stator*. Thus, it is impossible for this reference to provide any reason to modify the angular arrangements in the *rotor* of the Asano et al. patent to result in the unique angular arrangements set forth in independent claims 1 and 8 as now amended.

Under U.S. patent law, the mere fact that the prior art can be modified does *not* make the modification obvious, unless an *apparent reason* exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. See, KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had

some “apparent reason to combine the known elements in the fashion claimed.” *Id.* at 1741. The current record lacks any apparent reason, suggestion or expectation of success for combining the patents to create Applicants’ unique combinations of features now set forth in independent claims 1 and 8. Therefore, Applicants respectfully request that this rejection independent claims 1 and 8 be withdrawn in view of the above comments and amendments.

Moreover, Applicants believe that dependent claims 7, 9-14, 19 and 20 are also allowable over the prior art of record in that they depend from independent claim 1 or 8, and therefore are allowable for the reasons stated above. Also, dependent claims 7, 9-14, 19 and 20 are further allowable because they include additional limitations, which in combination with the features of independent claim 1 or 8, are not disclosed or suggested in the prior art. Therefore, Applicants respectfully request that this rejection dependent claims 7, 9-14, 19 and 20 be withdrawn in view of the above comments and amendments.

#### *New Claims*

Applicants have added new claims 22-24 by the current Amendment. New claims are dependent claims that correspond to previously presented claims 12-14, but depend from claims 20, 19 and new 23, respectively. Thus, new dependent claims 22-24 are believed to be allowable by virtue of their dependence on independent claim 8, as explained above. Also, new dependent claims 22-24 are further allowable because they include additional limitations, which in combination with the features of independent claim 8 and any intervening claims, are not disclosed or suggested in the prior art.

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In view of the foregoing amendment and comments, Applicants respectfully assert that claims 7, 9-14, 19, 20 and 22-24 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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